

A STUDY OF PSYCHOLOGICAL CHARACTERISTICS AND
COGNITIVE LEARNING AMONG NDEA INSTITUTE
PARTICIPANTS

A THESIS
SUBMITTED TO THE FACULTY OF THE SCHOOL OF EDUCATION,
ATLANTA UNIVERSITY, IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF ARTS

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AUGUST 1967

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ACKNOWLEDGMENTS

The writer acknowledges her indebtedness to Dr. Huey E. Charlton, under whose supervision this thesis had its beginning and was carried to its completion. Without his guidance this thesis project could not have become a reality.

To the counseling and guidance office personnel and the institute director, the writer gratefully acknowledges her thanks for their helpful suggestions and assistance while the data for the study were being processed.

This acknowledgment would not be complete without extending thanks to my father for his patience and understanding during the entire writing period of this thesis project.

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CHAPTER I

INTRODUCTION

Rationale.---In order to adequately evaluate a program of instruction, the educational goals or objectives must be accepted and used as guides for the evaluation. By educational objectives, we mean explicit formulations of the ways in which students are expected to be changed by the educative process. That is, the ways in which they will change in their thinking, their feelings, and their actions. There are many possible changes that can take place in students as a result of learning experiences, but since the time and resources of our schools are limited, only a few of the possibilities are ever realized. It is important that the major objectives of a unit of instruction or course or training program be clearly identified if the activities are to be guided by some master plan.

One source commonly used in thinking about objectives is the information available about the students. What is their present level of development? What are their needs? What are their interests? What are the activities they are

expected to perform? What are the problems they are likely to encounter? What are the opportunities they are likely to have for putting to use that which was learned.

Another source for objectives comes from the nature of the subject matter and the deliberations of subject matter specialists on the contributions their subject is able to make to the education of the individual. What is the conception of the subject field? What are the types of learning which can arise from a study of that subject matter?

Finally, educational objectives must be related to a psychology of learning. The use of a psychology of learning enables the faculty to determine the appropriate placement of objectives in the learning sequence, helps them to discover the learning conditions under which it is possible to attain an objective.

It should be clear from the foregoing that objectives are not only the goals toward which the curriculum is shaped and toward which instruction is guided, but they are also the goals that provide the detailed specifications for the construction and use of evaluative techniques.¹

¹Benjamin S. Bloom, Taxonomy of Educational Objectives Handbook I: Cognitive Domain (New York: Longmans, Green and Company, 1956), p. 27.

In consideration of these three sources came a slate of objectives formulated by the director and institute staff members for the 1966-67 NDEA Counseling and Guidance Institute.

The broad objectives for the enrollees in the institute pointed toward improvement of professional competence and qualifications in the area of counseling and guidance of personnel engaged in counseling and guidance and of those aspiring to the profession both on a full-time and a half-time basis.

The specific objectives for the institute sought to bring about certain psychological changes in both the cognitive and the affective areas.

Since cognition refers to the recognition or recall of knowledge and the development of intellectual abilities and skills, the institute objectives in this domain reads:

1. To broaden and deepen the enrollees' present knowledge, comprehension, application, analysis, and evaluation of:
 - (a) The philosophies, principles and practices which underlie guidance, counseling, and other pupil personnel services.
 - (b) The nature (stability and change) and range of human characteristics and facilitating the development of such potentialities.
 - (c) Contemporary vocational development theory

and occupational and educational information.

- (d) Contemporary counseling theories and practices.
- (e) Statistics and research methodology in guidance and counseling.
- (f) Group procedures and processes in guidance and counseling.
- (g) Professional development and relationships of the school counselor and his ethical and legal responsibilities.
- (h) Program development and management responsibilities of the school counselor.
- (i) The psychological, the sociological, the anthropological foundations which undergird the art and science of school counseling.
- (j) The nature, structure and function of the American educational enterprises.
- (k) The counseling of students in grades 7-12 by engaging in supervised practice which is inclusive of: (a) laboratory experiences, (b) counseling practicum, and (c) field experiences or internship.¹

The cognitive domain is the area in which the clearest definitions of objectives are to be found phrased as descriptions of eventual enrollee behavior.

Probably the most common educational objective in American education is the acquisition of knowledge or

¹NDEA Counseling and Guidance Institute Memorandum
(Atlanta: Atlanta University, 1966), pp. 1-2.

information. One of the major problems with regard to knowledge is determining what is knowable, for there are different ways in which something can be said to be known.¹

Thus, the NDEA Comprehensive Test was designed to provide evidence of the extent to which enrollees attained each of the specific objectives of the unit of instruction or show evidences of appreciable change in acquisition of knowledge.

Coupled with the NDEA Comprehensive Test are "grades" as another indication of progress in the institute.

From the cognitive we move to the affective domain which includes objectives that describe changes in interests, attitudes, and values and development of appreciations and adjustments.²

The objectives in the affective area, as set forth by the Atlanta University institute staff are stated as follows:

2. To broaden and deepen the enrollees' present abilities to attend to and respond to the necessity for assuming progressively, greater degrees of responsibility for their own professional development as secondary school counselors.

¹Bloom, op. cit., p. 28.

²Ibid., p. 7.

3. To broaden and deepen the enrollees' present abilities to value, to organize, and to characterize by a value or value complex their own professional competence and professional development as secondary school counselors.¹

A test of achievement measures the extent to which the enrollees have attained the institute objectives. It is an adequate and valid test if it provides evidence of the extent to which students are attaining each of the major objectives of the unit of instruction.

A difference in the evaluation between the cognitive and the affective domains is the difficulty of applying standards. While there may be only one "right" kind of achievement for an objective in the cognitive domain, there may be many "right" behaviors equally correct in achieving an objective in the affective domain.

Thus, a cognitive skill is built, then used in rewarding situations so that affective interest in the task is built up to permit the next cognitive task to be achieved and so on.²

If students develop appropriate affective behaviors,

¹Memorandum, op. cit., p. 2.

²David R. Krathwohl, et al., Taxonomy of Educational Objectives Handbook II: Affective Domain (New York: David McKay Company, Inc., 1964), pp. 60-61.

then learning of the subject takes place at a high level of complexity.

Allport emphasizes the basic reorganization that must take place in the individual if really new values and character traits are to be formed. In understanding this process, ways to help bring about major changes in the affective domain with less trauma and conflict than now seems to be the case. It is believed that this area of the affective domain touches all in an attempt to alter basic attitudes and values.¹

If we are to muster the tremendous effort and resources required to bring about basic changes in the more complex affective behaviors, we must be certain of the importance and desirability of these new objectives. It is not enough merely to desire a new objective or to wish others to be molded in the image that we find desirable or satisfactory. We must find ways of understanding and determining what objectives are central and significant if we are to summon the appropriate effort to achieve these more complex objectives in the areas of attitudes, values, temperament.

¹Ibid., pp. 89-90.

Evolution of the problem.--The problem of this study evolved out of the belief, on the part of the writer, that an evaluation of any unit of work, or course can only be made in terms of the goals or objectives set forth at the beginning of a unit of instruction. The writer feels that a one year course of instruction should have meaningful impact on the participants and that as a result of this impact some degree of change in abilities, skills, attitudes and values result. Therefore, if certain psychological characteristics are tested or measured after full participation in an intensified training program, evidences of change are likely to result, and, therefore, inferences could be made about future Atlanta University institute enrollees in the area of guidance and counseling.

Contribution to educational research.---The major value or contribution of this study lies in the extent to which the findings will create an awareness on the part of counselor-educators and enrollees of the importance of using both the cognitive and the affective domains in formulating institute goals or objectives. This will not only give aid to staff members in formulating more realistic plans for the institute, but will help enrollees to identify their personal weaknesses both at the beginning and the end of the

institute experience.

Statement of the problem.--The problem involved in this study was to ascertain the extent to which participants in a one year training program of counselor education exhibit change in the cognitive and the affective aspects of their behavior.

Purpose of the study.--The purpose of this study was to ascertain the impact of a one year training program of counselor education on the cognitive and affective aspects of behavior of twenty-four enrollees. More specifically, the purposes were as follows:

1. To ascertain the degree of change in the temperament of enrollees, as determined by the Guilford-Zimmerman Temperament Survey.
2. To ascertain the degree of change in the attitude of enrollees, as determined by the Minnesota Teacher Attitude Inventory.
3. To ascertain the degree of change in abilities, skills, and knowledge of enrollees, as determined by the NDEA Comprehensive Test.
4. To ascertain the achievement level of enrollees, as determined by grades assigned to enrollees during the institute.

Definition of terms.--Significant terms to be used throughout this study are defined as follows:

1. Achievement, as used in this study, is limited to performance on the NDEA Comprehensive Test.

2. Temperament, for the purposes of this study, is limited to the ten areas, as measured by the Guilford-Zimmerman Temperament Survey.
3. Attitude is viewed as limited to the trait or traits, as measured by the Minnesota Teacher Attitude Inventory.
4. Grades, as used in this study, have reference to school marks assigned to enrollees while participating in the practicum of the 1966-67 Counseling and Guidance Institute.

Limitations and locale of the study.--This study was limited to a specifically defined group of graduate students who were enrolled in the NDEA Counseling and Guidance Institute at the Atlanta University for the academic year 1966-67. The validity of the study depends upon the validity of the instruments employed in conducting the study, and of the validity of grades earned by enrollees while participating in the 1966-67 Counseling and Guidance Institute. Therefore, the findings could be applied to groups other than the subjects of this investigation with caution.

Description of subjects.--The subjects used in this study were twenty-four enrollees in the Atlanta University Counseling and Guidance Institute.

Description of materials.--The materials included the following:

1. The Minnesota Teacher Attitude Inventory. This test is designed to measure those attitudes of a

teacher which predict how well he will get along with pupils in interpersonal relationships. The inventory consists of 150 items.¹

2. The National Defense Education Act Comprehensive.

This test is an achievement test designed for testing institute enrollees both pre and post institute. It measures in six areas: (1) History, Principles, and Professional Information, (2) Occupational and Educational Information, (3) Test and Measurement, (4) Counseling Theory and Procedure, (5) Psychological Foundations, (6) Related Fields.²

3. The Guilford-Zimmerman Temperament Survey. This is a survey of responses classified in ten areas described as:

- General Activity (G): Rapid pace of activities, energy, vitality, keeping in motion, production, efficiency, liking for speed, hurrying, quickness of action, enthusiasm, liveliness.
- Restraint (R): Serious-mindedness, deliberate, persistent effort, self-control.
- Ascendance (A): Self defense, leadership habits, speaking with individuals, speaking in public, persuading others, being conspicuous, bluffing.
- Sociability (S): Having many friends and acquaintances, entering into conversations, liking social activities, seeking social contacts, seeking limelight.

¹Walter W. Cook et al., Minnesota Teacher Attitude Inventory Administrator's Manual (New York: Psychological Corporation, 1953), p. 3.

²Committee, National Defense Education Act Comprehensive Test, Form A.

Emotional

- Stability (E): Evenness of moods, interests, energy, optimism, cheerfulness, composure, feeling in good health.
- Objectivity (O): Being "thickskinned" vs hypersensitiveness, egoism, self-centeredness, suspiciousness, fancying of hostility.
- Friendliness (F): Toleration of hostile action, acceptance of dominance, respect for others.
- Thoughtfulness (T): Reflectiveness, meditateness, observing of behavior in others, interest in thinking, philosophically inclined, observing of self, mental poise.

Personal

- Relations (P): Tolerance of people, faith in social institutions.
- Masculinity (M): Interest in masculine activities and vocations, not easily disgusted, hard-boiled, resistant to fear, inhibition of emotional expressions, little interest in clothes and styles.¹

4. Grades. These were school marks earned by enrollees while participating in the practicum of the 1966-67 Counseling and Guidance Institute.

Method of research.--The method of research employed in this study was the descriptive survey method, utilizing an attitude inventory, a temperament survey, an achievement test, grades.

¹J. P. Guilford, and Wayne S. Zimmerman, Guilford-Zimmerman Temperament Survey Administrator's Manual (Beverly Hills: Sheridan Supply Company, 1957), pp. 2-3.

Procedural steps.--The procedural steps used in conducting this study are as follows:

1. Permission to conduct this study was obtained from the NDEA Institute director and major adviser.
2. Pre and post test data and grades were obtained from institute officials for twenty-four enrollees.
3. Test data for the twenty-four enrollees were tabulated into frequency tables.
4. The enrollees were compared on the basis of their pre and post test performance. Comparison was based upon differences between mean scores for the pre and post tests.
5. The pre and post institute mean scores were compared by use of Fisher's t.

The findings are presented in tabular form followed by a verbal description of the tables.

A summary of the findings was made in order to draw specific conclusions, which answered the purposes.

Implications and recommendations were outgrowths of the findings. It is the wish of the writer that the findings are valid enough to warrant generalizations for enrollees who will be enrolled in future counseling and guidance institutes at Atlanta University. The writer hopes that the findings might give rise to modifications or adjustments of the institute's efforts to meet the needs of enrollees who

wish to become counselors and those who are already working in the field.

Survey of related literature.--In reviewing the literature pertinent to this research project, it was found that many factors are related to change as a result of any training program.

Both the cognitive and the affective domains must be considered in setting realistic goals for enrollees so that desirable outcomes can be realized.

New horizons point toward improved guidance services conducted by better trained teachers and counselors in longer and more meaningful periods of training for broader understanding of helpful principles and techniques from related disciplines, and better means of evaluating counselor training programs.

The writer feels that the review of literature given herein is necessary to the understanding of this problem and will be presented in the following areas:

1. Objectives and Curriculum Planning
2. Evaluation in Education
3. Theories of Personality
4. Research Studies that Reveal Evidences of Change in Attitudes and Temperament From the Impact of Training.

According to Ralph Tyler, problems of developing curriculum and instruction are usually considered in relation to four major types of questions: What educational purposes or objectives should the school or course seek to attain? What learning experiences can be provided that are likely to bring about the attainment of these purposes? How can these learning experiences be effectively organized to help provide continuity and sequence for the learner and to help him in integrating what might otherwise appear as isolated learning experiences? How can the effectiveness of learning experiences be evaluated by the use of tests and other systematic evidence-gathering procedures?¹

Tyler's remarks suggest that objectives would need to stem from the cognitive as well as from the affective areas, if meaningful evaluation is to follow.

Dressel states that evaluation procedures particularly the more formal ones usually designated as tests, are too frequently something apart from instruction. Particularly is this true when the major purpose is that of arriving at a grade for a student. The value of tests for grading

¹Ralph Tyler, "Achievement Testing and Curriculum Construction," Trends in Student Personnel Work (Minneapolis: University Press, 1949), pp. 391-407.

purposes cannot be denied, but tests so used must be subjected to limitations which result in a narrow evaluation program. Such a program does little to reveal student growth with regard to many goals and even less toward providing information of instruction. Even evaluation programs founded on broader considerations have a disconcerting way of ending in a series of statistical tables and in vague generalities which influence our educational program but little.¹

The purpose of these remarks is to suggest an approach to evaluation which will interrelate instruction and evaluation and make it clear that the two are but two sides of one coin--the coin being the medium of exchange which enables us, as teachers, to purchase optimum student development with regard to our, and their educational goals. Such evaluation proceeds along the following lines: (1) goals or objectives are determined and stated, (2) these goals are clarified by stating them in terms of definite and observable behavior (interpreted in a broad sense to include attitudes, beliefs, actions, participation, ways of thinking,

¹Paul L. Dressel, "Evaluation Processes for General Educational Objectives," Educational Record, XXXI (April, 1950), 97-98.

etc.) on the part of the individual as he deals with problems, situations, and issues which confront him, (3) procedures are developed to obtain evidence of the presence of these behaviors, (4) evidence of change in students is obtained and analyzed. This means accumulation of the same kind of evidence before and after the educational experience which we wish to evaluate, (5) the implications of these data for changes in classroom activity, teaching techniques, or even in objectives are considered, (6) appropriate changes in classroom activity are made, and the steps are repeated--as a check on the efficacy of the changes and as a basis for their improvement.¹

Citing an example, Dressel uses questions to make his belief more implicit. He says: Of those individuals who are observed to handle adequately a situation supposedly involving a certain behavior: Do all show that behavior? Do they show it in varying ways and amounts? In what ways do they differ? Do some show complete absence or almost complete absence of the behavior? If presence of the desired behavior is not found to be necessary for success, what are alternative patterns of behavior which succeed, and to what

¹Ibid.

knowledge, experience, interests, attitudes, etc. are these due?¹

It should be noted here that the answers to these questions about students or enrollees should be supplied in terms of actual data on individuals, not in terms of guesses.

Well prepared measuring instruments can be very useful in determining the effectiveness of curricular pattern on the basis of test results. It is sometimes possible to determine the changes that should be made in order to more completely attain the goals that have been set. This approach assumes that tests are devised in terms of the objectives that have been established. It is more than determining how much subject matter has been assimilated.

The measuring instrument, Micheels states, should be devised in such a manner that the real objectives of the course are being measured. This is not easy to do and cannot be done entirely by pencil-and-paper achievement tests.²

In the assessment of personality we encounter what is called clusters. From this point of view we look at the

¹Ibid., pp. 110-113.

²William J. Micheels, and M. Ray Karnes, Measuring Educational Achievement (New York: McGraw-Hill Book Company, Inc., 1950), pp. 83-84.

clusters of personality traits.

One thinks of the work of Sheldon, of Thurstone, Cattell, Guilford, and others who studied, experimented and arrived at conclusions of the effects of these groups of "feelings" on the total personality.

Through their efforts, we can now assess such units as general activity, sense of well-being, restraint, emotional stability, lability, somatonia. While one could wish for a stricter limitation of the concept of temperament than some of these investigators employ, still they deal constructively with units representing the prevailing "emotional weather" in which personalities develop.¹

Temperament, as defined in Britannica language dictionary, is the characteristic physical and mental peculiarities of an individual as manifested in his reactions; one's mental constitution, make up, disposition and adjustment.²

Sheldon has reported an extremely close relationship between somatotype and three sets of temperamental characteristics. He concluded that body type is an important

¹Gardner Lindzey, and Calvin S. Hall, Theories of Personality (New York: John Wiley and Sons, Inc., 1965), p. 255.

²Funk and Wagnalls, Britannica World Language Dictionary (New York: Funk and Wagnalls Company, 1962), p. 1297.

determinant of personality.¹

We can be reasonably certain that the methods of measuring achievement for research purposes should reach into certain other realms of the enrollees' psychological makeup. Thus, their temperament and their attitudes.

Thurstone says that his concept of attitude denotes the sum total of a man's inclinations and feelings, prejudice or bias, pre-conceived notions, ideas, fears, threats, and convictions about any specific topic. Thus, a man's attitude means all that he feels and thinks about a subjective and personal affair.²

Wickman, in his classical study of teacher attitudes, defines the term "attitude" as the habitual mode of regarding anything; any settled behavior or conduct, opinion or purpose regarding anything.³

DiMichael reports in his study of comparative changes in teachers' attitudes resulting from courses in mental hygiene and educational guidance that teachers' attitudes play

¹Lindzey, op. cit., pp. 319-325.

²Louis L. Thurstone, The Measurement of Attitude (Chicago: The University of Chicago Press, 1929), pp. 6-7.

³E. K. Wickman, Children's Behavior and Teachers' Attitudes (Worcester, Massachusetts: The Commonwealth Press, 1928), p. 157.

an important part in the personality development of the child. The psychologist, mental hygienist, guidance counselor, teacher, parent, administrator are all concerned with this factor in the process of the education of children.

The study used two groups of teachers--one group of teachers enrolled in a mental hygiene course; one group was enrolled in an educational guidance course. The study was undertaken to answer four questions. Only two of the four questions were pertinent to the present study. These questions are: How does a Mental Hygiene course compare with an Educational Guidance course in effecting changes in the attitudes of experienced teachers toward behavior problems of the classroom, and will the change in teachers' attitude, if observed, be in a desirable direction from the viewpoint of the child's wholesome emotional growth as this is conceived by Mental Hygienists of 1927 and a group of Mental Hygienists of 1940. The teachers were asked to rate classified behavior problems on a scale from "grave concern or serious" to "of no consequence" at both the beginning and end of the of the classes.

The initial average ratings of the Educational Guidance class correlated lower with mental hygienists' rating than did the initial ratings of the Mental Hygiene class.

The initial ratings of the Guidance class correlated .29 with the 1927 mental hygienists, as against .49 between the initial rating of the Mental Hygiene class and 1927 hygienists. At the start of the courses, the ratings of the Guidance class correlated .55 with the 1940 hygienists, whereas the ratings of the Mental Hygiene class correlated .70 with the 1940 hygienists.

The Educational Guidance course did not produce any noteworthy changes in the relative position of the seriousness ratings of the teachers toward behavior problems. Moreover, their attitudes toward behavior problems both before and after the course, as compared to the mental hygienists, remained almost the same.¹

The course in Mental Hygiene produced an appreciable change in the relative position of the seriousness ratings of the teachers toward the behavior problems.

He concluded that the Educational Guidance course effected no material change in the attitudes of the teachers toward the behavior problems. The Mental Hygiene course did produce a change in the attitudes of the experienced teachers

¹Salvatore G. DiMichael, "Comparative Changes in Teachers' Attitudes Resulting From Courses in Mental Hygiene and Educational Guidance," Journal of Educational Research, XXXVII (September, 1943), 656-669.

in the class. The change was toward a closer agreement with the attitudes of mental hygienists.¹

This indicates that counselor educators must be fully aware of the effect of the enrollee's present behavior upon his present and future development. Inasmuch as counselors in training will be expected eventually to assist or aid students in solving perplexing problems of life, then they should be subjected to instruction in understanding human personality, its causes, modes of behavior, and outlets of energy. Further, this psychological point of view must be harmonized with the enrollee's personal and social nature. Out of such a harmony will be possible a maximally effective and wholesome counselor training course.²

Bain presented evidence to demonstrate that post-graduate students who enrolled in certain educational psychology courses showed that courses which included specific instructions on the nature and behavior of children changed teachers' attitudes in the direction of greater similarity to the attitudes of mental hygienists. The courses which considered method of training teachers without direct attack

¹Ibid.

²Ibid., pp. 669-670

on the basic study of children did not effect a change in the teachers' attitude toward problem behavior.¹

In 1927, Wickman published the results of a comprehensive study of teacher attitudes. A correlation of $-.11$ was found between the attitudes of experienced teachers and mental hygienists.

He concluded that the principle that behavior is heavily determined by previous experience as well as by immediate stimulations, and that ideas modify behavior patterns only in so far as they become a dynamic part of individual behavior. Social behavior, Wickman says, is not transformed by knowledge or instruction until that knowledge or instruction becomes integrated into the behavior of the individual. Only in so far as the social experiences and attitudes of children are in harmony with the ideas that are presented to them, and to the extent that they can comfortably practice these ideas, can behavior be intellectually controlled.²

Another approach to the study of personality components is by examining temperament. Leeds' investigation had

¹W. E. Bain, "A Study of the Attitudes of Teachers Toward Behavior Problems," Child Development, V (1934), 19-35.

²Wickman, op. cit., pp. 177-182.

as its principal object an attempt to determine somewhat more definitely the relationship between factors in personality and temperament with two instruments, the Guilford-Zimmerman Temperament Survey and the Minnesota Teacher Attitude Inventory. The coefficients of correlations were all significant at the .01 level of confidence except for three traits G, R, T. The only negative coefficient (-.07) was that for T and the MTAI.

There is definite indication then, that teachers who get along well with pupils tend to be cooperative, friendly, objective, and emotionally stable, and, to a lesser degree, manifest sociability, social ascendancy, and masculinity in emotions and interests.¹

In a study by Sprague which compared the Guilford-Zimmerman Temperament Survey scores with achievement level suggests that achievement fluctuation is particularly important in attempting to predict achievement level.

Scores on the Guilford-Zimmerman Temperament Survey were correlated by both curvilinear and rectilinear methods with measures of course achievement level and intra-student

¹Carroll H. Leeds, "Teacher Attitudes and Temperament as a Measure of Teacher-Pupil Rapport," Journal of Applied Psychology, XXXX (October, 1956), 333-337.

achievement fluctuation in introductory psychology. Achievement level and fluctuation were curvilinearly related and the fluctuation measures were adjusted to remove this artifact. Two GZTS scores, Restraint and Objectivity were rectilinearly related to achievement level with " r "=.20 and .21, while two additional scales, Friendliness and Masculinity, showed curvilinear correlations with achievement level (η =.27 and .25). None of the GZTS scores were rectilinearly related to fluctuation, but three scales, Ascendancy, Sociability, and Emotional Stability, were curvilinearly correlated with fluctuation (η =.35, .27, and .24).¹

Krathwohl states that back of all the more operational and psychological problems is the basic question of what changes are desirable and perhaps what changes are necessary.

He further states from the writings of Asch, that the shaping of attitudes reveal something of the process of interaction between the individual and the environment which brings about major changes.²

¹J. L. Sprague, "The Guilford-Zimmerman Survey as a Predictor of Achievement Level and Achievement Fluctuation in Introductory Psychology," Journal of Applied Psychology, XXXVIII (December, 1954), 409-413.

²Krathwohl, op. cit., p. 89.

Wrinkle puts it another way, and suggests that it is difficult to accept the idea that all learning experiences should result in the modification of behavior. One likely reason is that you may have a too limited conception of behavior. You may be thinking entirely about overt behavior, behavior you can easily observe. But, (1) thinking effectively, (2) using the scientific method, (3) discriminating in choice of values, (4) setting up worth-while achievable goals, and (5) expressing ideas effectively are also behaviors just as well as observing traffic or spending one's money wisely.¹

It might be hypothesized here that at the conclusion of an NDEA institute or training program or course of study, it is expected that the impact of didactic instruction, practicum and field experiences would have caused measurable change in the enrollees' cognitive and affective behaviors.

The fact that the present study will deal with aspects of change and potential counselor effectiveness of NDEA institute enrollees as a result of institute experience,

¹William J. Wrinkle, Improving Marking and Reporting Practices in Elementary and Secondary Schools (New York: Rhinehart and Company, Inc., 1947), p. 94.

is the criterion for inclusion of the following four studies in this section of the related literature.

Patterson reports, as cited in the Annual Review of Psychology, that several studies conducted with NDEA institute students have appeared in the literature recently. These studies, he says, suggest changes in attitudes with instruction occur though there is some question of their persistence following short-term training programs.¹

Kemp found that trainees in a counseling practicum became more permissive and understanding; however, while those low in dogmatism showed these changes not only on the Porter test but in actual interviews with clients as well, those high in dogmatism did not show the change in the actual interview situation.²

Dole found little success in predicting effectiveness in school counseling following short-term training, using a large number of prediction variables; three criterion measures (NDEA staff ratings, principal's ratings, and state supervisor's ratings) were not significantly related

¹Paul R. Farnsworth et al., Annual Review of Psychology (Palo Alto, California: Annual Reviews, Inc., 1966), p. 84.

²C. G. Kemp, "Influencing of Dogmatism on the Training of Counselors," Journal of Counseling Psychology, IX (1962), 155-157.

to each other.¹

Joslin found no relationship between a test of knowledge of various subject matter areas related to counseling, taken at the beginning of the year, and ratings of interviews for counseling competence at the beginning and at the end of the year for subjects in an NDEA institute.²

Education obviously, is achieved within the minds and bodies of individuals, and is designed to increase, decrease, or otherwise modify a variety of individual behaviors. But the purposes for which individual behaviors are to be modified, either by the individual purposing for himself, or by others purposing for and through him, are in large part usually, and in some degree invariably, social purposes--that is tied up with the collective functions and well-being of families, local communities, cities and nations.

Only through study of the significance of individual behaviors in a world primarily social can it be determined which kinds of behaviors the educative processes should seek

¹A. A. Dole, "The Prediction of Effectiveness in School Counseling," Journal of Counseling Psychology, XI (1964), 112-121.

²L. C. Joslin, "Knowledge and Counseling Competence," Personnel and Guidance Journal, XXXXIII (1965), 79-95.

to affect. The behaviors of men function--that is, have their uses, discharge their services--in a world which is, first of all, material. Hence, it is to the sciences of social adjustments, interaction, or relations that we turn primarily for guidance on educational values or purposes.¹

Maslow has suggested that peak experiences may have a powerful influence on major changes in the individual. The hypothesis arising out of Maslow's work is that a single powerful experience may have much more impact on the individual than many less powerful experiences. A single hour of classroom activity under certain conditions may bring about a major reorganization in cognitive as well as affective behaviors.²

¹Phillip W. L. Cox, Objectives of Education (New York: Bureau of Publications, Teachers College, Columbia University, 1929), pp. 25-26.

²Krathwohl, op. cit., p. 88.

CHAPTER II

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

General description of treatment of data.--This study was undertaken to ascertain the impact of a one year training program of counselor education on the cognitive (recognition and recall of knowledge and the development of intellectual abilities and skills), and the affective (interests, attitudes, values, appreciations, adjustments, and temperament) aspects of behavior.

It was assumed that appreciable change would be detected in the cognitive and the affective behavior of enrollees after participation in an academic year of intensified training.

The writer received coded grade-point averages assigned to enrollees as a result of the practicum experience, and coded raw scores from the three psychometric instruments employed in the study.

The performance of enrollees on both the pre and post institute National Defense Education Act Comprehensive Test,

the Minnesota Teacher Attitude Inventory, the Guilford-Zimmerman Temperament Survey, and grades were compared and analyzed. Distribution tables of raw scores were made for all tests and subtests for both pre and post institute testing. The scores were ranked from high to low to determine the range. The mean, the standard deviation, the standard error of the mean, and the standard error of the difference between means were computed. The "t" ratio was used as a test of significance at the .01 per cent level of confidence.

The grades assigned to the 24 enrollees as a result of the practicum experience were analyzed in terms of the mean, the standard error of the mean, the standard deviation, and the standard error of the standard deviation for its reliability.

The practicum grades represent the enrollees' ability to synthesize and put into action the result of didactic instruction, the practicum, and field experiences in helping counselees resolve their problems.

The NDEA Comprehensive is a test of achievement and measures the extent to which the enrollees have attained the institute objectives, and the profile from this test, both pre and post institute, indicates the degree of behavioral change in the cognitive domain.

The means of tests and sub-tests of the NDEA

Comprehensive, the Guilford-Zimmerman Temperament Survey, and the Minnesota Teacher Attitude Inventory administered at the beginning of the institute were compared with the means of the same tests for the 24 enrollees administered at the end of the institute experience to ascertain the degree of change.

Pre and post institute NDEA Comprehensive test data.--The data concerning the performance of the subjects of this study on the pre and post institute NDEA Comprehensive are presented in Table 1. The NDEA Comprehensive consists of seven variables. They are as follows: Section I - History, Principles, and Professional Information; Section II - Occupational and Educational Information; Section III - Test and Measurement; Section IV - Counseling Theory and Procedure; Section V - Psychological Foundations; Section VI - Related Fields, and Section VII - Total Scores.

The data in column 1 disclose that for the 24 subjects of this study, the scores on Section I, History, Principles, and Professional Information, of the pre institute NDEA Comprehensive ranged from a low of 17 to a high of 34, with a mean of 24.79, a standard deviation of 4.74, and a standard error of the mean of 1.19. For the same 24 subjects, after the institute experience, the scores on Section I of

TABLE 1

DISTRIBUTION OF RAW SCORES ON THE PRE
AND POST NDEA COMPREHENSIVE TEST

1		2		3	
Section I		Section II		Section III	
History, Principles and Professional Information		Occupational and Educational Information		Test and Measurement	
Pre	Post	Pre	Post	Pre	Post
25	36	9	32	9	25
29	37	17	29	11	25
23	31	13	35	11	31
27	38	19	27	12	20
34	37	22	29	18	25
25	32	13	37	13	36
33	35	21	23	13	20
19	41	19	41	16	38
22	35	11	27	13	21
22	34	21	26	16	21
26	34	23	26	16	24
19	38	14	25	14	28
19	38	9	37	13	32
24	36	13	33	16	26
20	26	15	15	13	10
23	34	15	32	10	26
23	38	14	21	6	13
19	32	17	24	12	27
28	29	15	19	12	18
30	37	22	25	13	27
27	31	14	33	26	29
27	35	15	30	13	27
17	30	19	25	11	16
34	37	22	30	20	28
N = 24	N = 24	N = 24	N = 24	N = 24	N = 24
Range=18	Range=16	Range=15	Range=27	Range=15	Range=27
M=24.79	M=34.63	M=16.33	M=28.38	M=13.63	M=24.71
SD=4.74	SD=3.39	SD=4.06	SD=5.79	SD=3.81	SD=6.41
SEm=1.19	SEm= .85	SEm=1.02	SEm=1.45	SEm= .95	SEm=1.60
Difference Between		Difference Between		Difference Between	
Means = 9.84		Means = 12.05		Means = 11.08	
SEdm = 1.14		SEdm = 1.73		SEdm = 1.41	
t ratio=6.98		t ratio=6.97		t ratio=5.93	
46df		46df		46df	

TABLE 1 - Continued

4		5	
Section IV		Section V	
Counseling Theory and Procedure		Psychological Foundations	
Pre	Post	Pre	Post
17	37	22	28
24	31	21	24
14	23	15	33
13	28	24	24
23	31	20	15
13	31	23	38
22	23	16	27
11	41	24	38
15	19	21	24
18	23	20	32
22	39	25	27
14	32	18	39
10	35	19	35
12	29	16	26
14	17	17	19
16	32	20	29
13	18	9	23
15	23	17	26
11	18	19	20
20	32	22	28
18	32	18	33
15	35	22	29
10	23	15	24
27	27	27	30
N = 24	N = 24	N = 24	N = 24
Range=18	Range=23	Range=17	Range=23
M=16.13	M=28.29	M=19.58	M=27.96
SD=4.63	SD=6.70	SD=3.81	SD=5.96
SEm=1.16	SEm=1.68	SEm=.95	SEm=1.49
Difference Between Means = 12.16 SEdm = 2.11 t ratio = 5.76 46df		Difference Between Means = 8.38 SEdm = 1.73 t ratio = 4.84 46df	

TABLE 1 - Continued

6		7	
Section VI		Section VII	
Related Fields		Total Score	
Pre	Post	Pre	Post
18	26	100	184
15	31	117	177
16	31	92	184
27	30	122	167
19	20	136	157
18	33	105	207
18	21	123	149
22	40	111	239
22	24	104	150
19	25	116	161
22	36	134	186
13	38	92	200
16	26	86	203
18	22	99	172
14	12	93	99
15	24	99	177
17	18	82	131
20	29	100	161
17	18	102	122
23	28	130	177
22	28	125	186
24	36	116	192
16	26	88	144
25	29	155	181
N = 24	N = 24	N = 24	N = 24
Range=11	Range=27	Range=66	Range=108
M=19.00	M=27.13	M=109.46	M=171.08
SD=3.53	SD=6.67	SD=14.85	SD=29.20
SEm=.88	SEm=1.67	SEm=3.71	SEm=7.30
Difference Between		Difference Between	
Means = 8.13		Means = 61.62	
SEdm=1.87		SEdm=8.19	
t ratio = 4.35		t ratio = 7.52	
46df		46df	

the NDEA Comprehensive ranged from a low of 26 to a high of 41, with a mean of 34.63, a standard deviation of 3.39, and a standard error of the mean of .85. A difference of 9.84 points was found to exist between the two means. The standard error of the difference between the two means was 1.41. The "t" ratio for comparative data reveals that a "t" of 2.68 is needed to be significant at the one per cent level of confidence with 46 df.¹ A "t" of 6.98 was found when testing the significance of the difference between the pre and post means of Section I of the NDEA Comprehensive.

Entering the table with 46 df (constant for this study), we find that the "t" of 6.98 was significant beyond the one per cent level of confidence. We may conclude here that the difference between the two means is real and is due to factors other than chance.

Column 2 shows data concerning performance of the 24 enrollees on the pre and post institute NDEA Comprehensive - Section II, Occupational and Educational Information. The scores on Section II of the pre institute NDEA Comprehensive ranged from a low of 9 to a high of 23, with a mean of 16.33, a standard deviation of 4.06, and a standard error of

¹J. P. Guilford, Fundamental Statistics in Psychology and Education (New York: McGraw-Hill Book Company, Inc., 1956), p. 220.

the mean of 1.02. The post institute scores on Section II of the NDEA Comprehensive ranged from a low of 15 to a high of 41, with a mean of 28.38, a standard deviation of 5.79, and a standard error of the mean of 1.45. The difference between the two means was 12.05, and a standard error of the difference between the two means was 1.73. For comparative purposes, the "t" ratio of 6.97 for pre and post institute means reveals that the difference between the means was statistically reliable and is significant beyond the one per cent level of confidence.

Column 3 is concerned with data on Section III, Test and Measurement, of the pre and post institute NDEA Comprehensive. The table reveals that scores made on the pre institute NDEA Comprehensive ranged from a low of 6 to a high of 20, with a mean of 13.63, a standard deviation of 3.81, and a standard error of the mean of .95. The scores on the post institute NDEA Comprehensive, Section III, ranged from a low of 10 to a high of 38, with a mean of 24.71, a standard deviation of 6.41, and a standard error of the mean of 1.60. The difference between the two means was found to be 11.08. The standard error of the difference between the two means was 1.41. A "t" ratio of 5.93 indicates that a "t" ratio of this magnitude is significant beyond the one per

cent level of confidence.

Column 4 is concerned with data on Section IV, Counseling Theory and Procedure, of the pre and post institute NDEA Comprehensive. The scores on the pre NDEA Comprehensive ranged from a low of 10 to a high of 27, with a mean of 16.13, a standard deviation of 4.63, and a standard error of the mean of 1.16. Scores on Section IV of the post institute NDEA Comprehensive ranged from a low of 17 to a high of 39, with a mean of 28.29, a standard deviation of 6.70, and a standard error of the mean of 1.68. A difference of 12.16 was found between the pre and post institute means of Section IV of the NDEA Comprehensive. The standard error of the difference between the two means was 2.11, and a "t" ratio of 5.76 was found. A "t" of 5.76 would indicate that the difference between the two means is real and is significant beyond the one per cent level of confidence.

Column 5 shows data concerning the scores on Section V, Psychological Foundations, of the pre and post institute NDEA Comprehensive. The pre institute scores on Section V ranged from a low of 9 to a high of 27, with a mean of 19.58, a standard deviation of 3.81, and a standard error of the mean of .95. Scores on Section V of the post

institute NDEA Comprehensive ranged from a low of 15 to a high of 39, with a mean of 27.96, a standard deviation of 5.96, and a standard error of the mean of 1.49. A difference of 8.38 points was found between the pre and post institute means, with a standard error of the difference between the two means of 1.73. The "t" ratio, as a test of significance, reveals that a "t" of 4.84 is significant beyond the one per cent level of confidence.

Column 6 shows data concerning the performance of enrollees on Section VI, Related Fields, of the pre and post institute NDEA Comprehensive. The pre institute scores ranged from a low of 13 to a high of 25, with a mean of 19.00, a standard deviation of 3.53, and a standard error of the mean of .88. Scores on Section VI of the post institute NDEA Comprehensive ranged from a low of 12 to a high of 40, with a mean of 27.13, a standard deviation of 6.67, and a standard error of the mean of 1.67. A difference of 8.13 points was found to exist between the pre and post institute means of Section VI, with a standard error of the difference between the means of 1.87. The "t" ratio for the significant difference between the two means is 4.35, signifying that the difference found between the pre and post institute means of Section VI is significant beyond the one per cent level

of confidence.

Column 7 shows data for Section VII, Total Scores, on the pre and post institute NDEA Comprehensive. The total scores for the pre NDEA Comprehensive ranged from a low of 88 to a high of 155, with a mean of 109.46, a standard deviation of 14.85, and a standard error of the mean of 3.71. Scores for the post institute NDEA Comprehensive ranged from a low of 99 to a high of 207, with a mean of 171.08, a standard deviation of 29.20, and a standard error of the mean of 7.30. A difference of 61.62 was found to exist between the pre and post institute means of the total NDEA Comprehensive. The standard error of the difference between the two means was 8.19. Testing the reliability of the difference between the two means, the "t" ratio for the significance of the difference between means was found to be 7.52. This indicates that the difference between the total pre and post institute means on the NDEA Comprehensive is significant beyond the one per cent level of confidence.

It may be concluded here that from sub-test scores and total test scores, enrollees in the one year NDEA counselor training program at Atlanta University achieved the objectives of the institute in the cognitive domain to a very high degree, and that it is safe to infer that

appreciable change may be expected to occur in the cognitive behavior of the enrollees.

Pre and post institute Guilford-Zimmerman Temperament Survey Data.--Table 2 is a presentation of the performance of the 24 enrollees on the pre and post institute Guilford-Zimmerman Temperament Survey. The test consists of 10 variables. The variables are General Activity (G), Restraint (R), Ascendancy (A), Sociability (S), Emotional Stability (E), Objectivity (O), Friendliness (F), Thoughtfulness (T), Personal Relations (P), and Masculinity (M).

The pre institute scores for the (G) variable of the GZTS ranged from a low of 8 to a high of 27, with a mean of 18.00, a standard deviation of 5.15, and a standard error of the mean of 1.29. Post institute scores for (G) ranged from a low of 8 to a high of 26, with a mean of 18.38, a standard deviation of 5.20, and a standard error of the mean of 1.30.

A difference of +.38 was found between the pre and post institute means. The standard error of the difference between the two means was 1.87, with a "t" ratio of .20. Since a "t" of 2.01 with 46 df is needed to be significant at the five per cent level of confidence, we may conclude that the difference between the pre and post institute means

TABLE 2

DISTRIBUTION OF RAW SCORES ON THE PRE AND
POST INSTITUTE GUILFORD-ZIMMERMAN
TEMPERAMENT SURVEY

(G)		(R)	
General Activity		Restraint	
Pre	Post	Pre	Post
8	14	19	20
15	18	19	19
17	8	21	9
14	17	23	18
17	13	22	18
16	15	10	16
27	20	22	17
25	25	13	12
21	23	11	15
17	25	22	10
23	23	6	11
15	15	13	19
17	23	21	13
21	24	17	10
10	20	19	25
23	21	17	18
14	19	23	18
27	26	10	10
25	20	22	24
17	11	14	14
17	11	23	21
10	9	17	14
21	23	20	19
15	18	21	20
N = 24	N = 24	N = 24	N = 24
Range=21	Range=19	Range=18	Range=17
M=18.00	M=18.38	M=17.71	M=16.25
SD=5.15	SD=5.20	SD=4.80	SD=4.36
SEm=1.29	SEm=1.30	SEm=1.20	SEm=1.09
Difference Between		Difference Between	
Means = +.38		Means = -1.46	
SEdm = 1.87		SEdm = 1.57	
t ratio = .20		t ratio = .93	
46df		46df	

TABLE 2 - Continued

(A)		(S)	
Ascendance		Sociability	
Pre	Post	Pre	Post
22	12	17	24
18	22	25	19
14	20	25	19
19	20	22	26
15	21	25	13
12	15	16	25
23	17	26	19
8	16	16	21
21	20	27	21
18	9	26	9
22	23	26	23
12	14	21	26
11	13	19	22
20	13	27	21
8	14	9	16
12	24	17	27
25	23	24	27
24	23	27	26
21	18	25	21
20	18	24	26
24	26	29	28
18	17	25	25
17	18	25	25
13	17	16	23
N = 24	N = 24	N = 24	N = 24
Range=18	Range=18	Range=21	Range=20
M=17.38	M=18.04	M=22.50	M=22.17
SD=5.02	SD=4.18	SD=4.85	SD=4.53
SEm=1.26	SEm=1.04	SEm=1.21	SEm=1.13
Difference Between		Difference Between	
Means = +.66		Means = -.33	
SEdm = 1.57		SEdm = 1.57	
t ratio = .42		t ratio = 21	
46df		46df	

TABLE 2 - Continued

(E)		(O)	
Emotional Stability		Objectivity	
Pre	Post	Pre	Post
23	10	17	8
27	18	21	18
26	17	25	20
22	26	19	22
27	13	23	10
18	25	17	21
21	21	20	14
23	17	22	10
21	21	23	23
20	20	19	20
22	22	16	26
18	21	15	17
14	18	18	15
23	15	27	14
19	10	18	19
11	22	7	21
23	23	26	21
29	25	23	22
28	23	23	20
24	24	22	22
25	19	23	20
24	25	26	26
23	24	11	16
21	22	20	18
N = 24	N = 24	N = 24	N = 24
Range=17	Range=17	Range=21	Range=19
M=22.17	M=20.04	M=20.04	M=18.46
SD=4.06	SD=4.42	SD=4.64	SD=4.58
SEm=1.01	SEm=1.11	SEm=1.16	SEm=1.15
Difference Between		Difference Between	
Means = -2.13		Means = 1.58	
SEdm = 1.41		SEdm = 1.57	
t ratio = 1.51		t ratio = 1.01	
46df		46df	

TABLE 2 - Continued

(F)		(T)	
Friendliness		Thoughtfulness	
Pre	Post	Pre	Post
11	8	15	26
23	10	20	15
19	8	16	17
21	13	26	14
24	17	15	25
13	22	13	22
7	9	20	22
20	11	12	17
16	17	19	22
20	18	23	12
6	9	16	17
12	25	7	19
15	5	25	18
18	14	20	11
15	11	23	26
2	14	26	23
22	19	24	21
10	7	13	14
15	18	20	15
21	22	19	17
18	16	24	21
22	20	19	19
10	13	19	21
24	23	21	19
N = 24	N = 24	N = 24	N = 24
Range=23	Range=21	Range=20	Range=16
M=16.00	M=14.54	M=18.96	M=18.88
SD=5.92	SD=5.48	SD=4.69	SD=4.12
SEm=1.48	SEm=1.35	SEm=1.17	SEm=1.03
Difference Between		Difference Between	
Means = -1.46		Means = -.08	
SEdm = 2.0		SEdm = 1.57	
t ratio = .73		t ratio = .05	
46df		46df	

TABLE 2 - Continued

(P)		(M)	
Personal Relations		Masculinity	
Pre	Post	Pre	Post
11	9	19	6
25	21	25	15
26	16	20	16
21	22	8	18
26	8	15	10
21	22	22	15
15	13	17	10
17	18	20	24
17	17	16	16
21	16	16	21
12	13	25	22
25	17	12	20
22	9	15	23
23	16	21	10
15	20	11	17
10	23	7	22
27	26	14	17
22	17	23	23
15	15	12	15
22	29	21	19
22	17	23	22
29	25	24	22
12	15	20	24
21	23	9	12
N = 24	N = 24	N = 24	N = 24
Range=20	Range=17	Range=19	Range=19
M=19.88	M=17.79	M=17.29	M=17.46
SD=5.24	SD=5.29	SD=5.34	SD=5.05
SEm=1.32	SEm=1.32	SEm=1.34	SEm=1.26
Difference Between		Difference Between	
Means = -2.09		Means = +.17	
SEdm = 1.87		SEdm = 1.86	
t ratio = 1.12		t ratio = .09	
46df		46df	

on the General Activity (G) variable is not statistically significant.¹

When the subjects of this investigation are compared with national norms, it is noted that on the pre-test, the local group's mean score varied from the national mean of 17.0 by only one point. The post-test mean differed from the mean for the norm group by only 1.38 points.

The pre and post test scores for the individuals within the group show that two subjects changed by 10 or more points on the General Activity variable in a positive direction, while three subjects changed 10 or more points in a negative direction.

The scores on the pre institute Restraint (R) variable ranged from a low of 6 to a high of 23, with a mean of 17.71, a standard deviation of 4.80, and a standard error of the mean of 1.20. Scores on the post institute (R) variable ranged from a low of 9 to a high of 25, with a mean of 16.25, a standard deviation of 4.36, and a standard error of the mean of 1.09. A difference of a -1.46 was found to exist between the two means. The standard error of the difference between pre and post institute mean scores on the

¹Guilford, op. cit.

(R) variable was 1.55. Testing the significance of this statistic, the "t" ratio was applied. The "t" of .93 was found, which was not significant. It would appear then, that the means for the pre and post institute (R) variable did not differ significantly from zero, and that the enrollees did not change measurably on the (R) variable of the GZTS.

When compared with the national mean of 16.4, it is noted that on the pre-test, the local group varied from the national mean by 1.31 points. The post-test mean differed from the national norm group by .15 points.

The pre and post test scores for the individuals within the group show that there were no significant changes on the Restraint variable in the positive direction, while two subjects changed 10 or more points in the negative direction.

The scores on the pre institute Ascendancy (A) variable of the GZTS ranged from a low of 8 to a high of 25, with a mean of 17.38, a standard deviation of 5.02, and a standard error of the mean of 1.26. Scores on the post institute (A) variable ranged from a low of 9 to a high of 26, with a mean of 18.04, a standard deviation of 4.18, and a standard error of the mean of 1.04. A difference of +.66 was found

between the two means. The standard error of the difference between pre and post institute means on the (A) variable was 1.57. A "t" ratio of .42, when testing the significance of the difference between the pre and post means, was not significant. Again, it appears that the means for pre and post institute on the (A) variable did not differ significantly from zero.

For the Ascendancy variable, the local group varied from the national norm group mean of 15.0 by 2.38 points. There was a 3.04 variation from the national mean for the post institute group.

The pre and post test scores for individuals within the group show that only one subject changed 10 or more points on the Ascendancy variable in a positive direction, and one subject changed 10 or more points in a negative direction.

Scores on the pre institute Sociability (S) variable of the GZTS ranged from a low of 9 to a high of 29, with a mean of 22.50, a standard deviation of 4.85, a standard error of the mean of 1.21. The scores on the post institute (S) variable ranged from a low of 9 to a high of 28, with a mean of 22.17, a standard deviation of 4.53, and a standard error of the mean of 1.13. A difference of -.33 was found

to exist between the pre and post means of the (S) variable. The standard error of the difference between the pre and post institute means on the (S) variable was 1.57. The "t" ratio was computed yielding a score value of .21. It was not significant.

The national mean for the Sociability variable is 18.8. There is a variation from the national mean by 3.70 points on the pre-test. On the post-test, the local group varied from the national norm group by 3.37 points.

The pre and post test for individuals within this group indicate that one subject changed by 10 or more points in a positive direction on the Sociability variable. There were no significant changes noted in the negative direction from the mean.

The pre institute Emotional Stability (E) variable scores of the GZTS ranged from a low of 11 to a high of 27, with a mean of 22.17, a standard deviation of 4.06, and a standard error of the mean of 1.01. The scores on the post institute (E) variable ranged from a low of 10 to a high of 26, with a mean of 20.04, a standard deviation of 4.42, a standard error of the mean of 1.11. A difference of -2.3 was found between the pre and post institute means of the (E) variable. The standard error of the difference between pre

and post institute means was found to be 1.14. To test the reliability of the standard error of the difference between the pre and post institute means of the (E) variable, the "t" ratio was computed. A "t" of 1.51 was obtained and was not significant.

When the local group is compared with the national norm group, it is noted that on the pre-test, the local group's mean score varied from the national mean of 16.3 by 5.87 points. The post-test mean differed from the mean of the norm group by 3.74 points.

The pre and post test scores for the individuals within the local group show that two subjects changed by 10 or more points on the Emotional Stability variable in a positive direction. There were no significant changes in the negative direction.

Data for the Objectivity (O) variable of the GZTS reveal that the scores on the pre institute (O) variable ranged from a low of 7 to a high of 27, with a mean of 20.04, a standard deviation of 4.64, a standard error of the mean of 1.16. Scores on the post institute (O) variable ranged from a low of 8 to a high of 26, with a mean of 18.46, a standard deviation of 4.58, and a standard error of the mean of 1.15. A difference of -1.58 was found between the pre and post

institute means on the (O) variable. The standard error of the difference between the two means was 1.57. To determine the significance of the difference between the pre and post means, the "t" ratio was found. The "t" value obtained was 1.01, which indicates that the difference found was not a real difference.

The national mean for Objectivity (O) is 17.4. When comparing the local group with the national norm, it was found that the mean score for the local group varied from that of the norm group by 2.64 points on the Objectivity variable, and there is a 1.58 variation from the national mean on the post-test.

The pre and post test scores for the individuals within the local group show that one subject changed by 10 or more points in a positive direction on the Objectivity variable and one subject changed by 10 or more points in a negative direction.

Friendliness (F) variable scores on the pre institute GZTS ranged from a low of 2 to a high of 24, with a mean of 16.00, a standard deviation of 5.92, and a standard error of the mean of 1.48. The post institute (F) scores ranged from a low of 5 to a high of 25, with a mean of 14.54, a standard deviation of 5.48, a standard error of the mean of 1.35.

A difference between the pre and post institute (F) variable means was -1.46, and the standard error of the difference between the two means was 2.0. The "t" ratio found for these data was .73, and it was not statistically reliable.

For the Friendliness (F) variable the national mean is 14.6. When the subjects of this investigation are compared with the mean of the norm group, it was noted that on the pre-test the local group varied from the norm group by 1.40 points on the Friendliness variable. The post-test mean varied from the mean of the norm group by .06 points.

The pre and post test scores indicate that individuals within the local group show that two subjects changed by 10 or more points in a positive direction on the Friendliness variable, while three subjects showed negative change by 10 or more points.

The pre institute Thoughtfulness (T) variable of the GZTS yielded scores ranging from a low of 7 to a high of 26, with a mean of 18.96, a standard deviation of 4.69, and a standard error of the mean of 1.17. Post institute (T) variable scores ranged from a low of 11 to a high of 26, with a mean of 18.88, and a standard deviation of 4.12, and a standard error of the mean of 1.03. A difference of -.08 was found between the pre and post institute (T) variable means.

The standard error of the difference between the two means was 1.57. The difference between the pre and post (T) variable means was tested, and a "t" value was found to be .05. There was no significant difference between the two means.

The national mean score for the Thoughtfulness (T) scale is 18.2. Comparing the subjects of the present study with the norm group, it was found that on the pre-test the mean for the local group varied from the mean of the norm group by .76 points. The post-test mean differed from the mean of the national group by .68 points.

The pre and post test scores for individuals within the local group show that two subjects changed positively by 10 or more points on the Thoughtfulness variable, and three subjects showed negative change by 10 points.

Scores on the pre institute Personal Relations (P) variable ranged from a low of 10 to a high of 29, with a mean of 19.88, a standard deviation of 5.24, a standard error of the mean of 1.32. The post institute (P) variable scores ranged from a low of 8 to a high of 26, with a mean of 17.79, a standard deviation of 5.29, and a standard error of the mean of 1.32. A difference of -2.09 was found between the pre and post institute means of the (P) variable. The standard error of the difference between the two means

was 1.87. The "t" value was 1.12 and was not significant.

The national mean for the Personal Relations (P) variable is 17.1. When the subjects of this investigation are compared with the national mean, it is noted that on the pre-test the mean for the local group varied 2.78 points. For the post-test a variation of .69 points is noted.

Only one subject within the local group showed positive change on the Personal Relations variable by 10 or more points. Three subjects showed change in the negative direction by 10 or more points.

The pre institute performance of enrollees on the Masculinity (M) variable of the GZTS reveals a range of scores from a low of 7 to a high of 25, with a mean of 17.29, a standard deviation of 5.34, and a standard error of the mean of 1.34. Post institute performance on the (M) variable shows a range of scores from a low of 6 to a high of 24, with a mean of 17.46, a standard deviation of 5.05, and a standard error of the mean of 1.26. A difference of +.17 was found between the pre and post institute means on the (M) variable. The standard error of the difference between the two means was 1.86. A "t" of .09 was found and was not significant.

The national mean score for the Masculinity (M) scale

is 16.1. When the subjects of this investigation are compared with the norm group it is noted that on the pre-test, the local group's mean score differed from the national norm group by only 1.19.

The pre and post test scores for the individuals within the group show that two subjects changed in the positive direction on the Masculinity variable by 10 or more points and three subjects changed in a negative direction by 10 or more points.

When group data are studied these changes in individuals are not evidenced because change in one person in one direction is often balanced by change in the opposite direction by another person.

Only the G and M variables yielded plus differences between pre and post institute means, but they were not statistically reliable. Variables R, A, S, E, O, F, T, and P yielded minus differences between pre and post institute means, they were not significantly different from each other. These findings appear to indicate that in the instances of minus differences, the enrollees regressed, though not to a significant degree.

A summary of the data analyzed and compared above would appear to indicate that the means between pre and post

institute on all 10 variables of the Guilford-Zimmerman Temperament Survey did not differ significantly from Zero.

These data further reveal that for the total group, the subjects of this study, after participation in a one year counselor training program, did not change significantly in the affective aspect of behavior, as far as temperament is concerned.

Pre and post institute Minnesota Teacher Attitude Inventory data.--The Minnesota Teacher Attitude Inventory was selected to assess attitudes concerning pupil-teacher relations. For each statement respondents are directed to mark SA, A, U, D, or SD.¹ In this study the test was employed to ascertain change in enrollee behavior in the affective domain.

Data concerning the Minnesota Teacher Attitude Inventory is presented in Table 3. The raw scores for the pre institute MTAI ranged from a low of -3 to a high of 81, with a mean of 36.63, a standard deviation of 22.32, and a standard error of the mean of 5.58. Post institute scores ranged from a low -3 to a high of 77, with a mean of 47.17, a standard deviation of 20.88, and a standard error of the

¹Anne Anastasi, Psychological Testing (New York: The Macmillan Company, 1961), pp. 551-552.

TABLE 3

DISTRIBUTION OF RAW SCORES ON THE PRE AND
POST INSTITUTE MINNESOTA TEACHER
ATTITUDE INVENTORY

Pre Institute Scores	Post Institute Scores
81	77
66	75
65	74
64	72
61	70
61	65
58	62
56	57
51	54
40	53
37	52
37	52
31	49
23	49
22	47
22	47
22	41
8	31
-17	30
-15	28
-15	14
-12	11
-12	-19
- 3	- 3
N = 24	N = 24
Range= 79	Range= 75
M=36.63	M=47.17
SD=22.32	SD=20.88
SEm=5.58	SEm=5.22
<p style="text-align: center;">Difference Between Means = +10.54 SEdm = 7.81 t ratio = 1.49 46df</p>	

mean of 5.22. A difference of 10.54 was found to exist between the two means. The standard error of the difference between the pre and post institute means was 7.81. A "t" ratio of 1.49 indicates that the difference found, though positive, was not significant. A "t" of 2.01 is needed to be significant at the five per cent level of confidence.

The pre and post scores for the individuals within the group show that eight subjects changed by 10 or more points in the positive direction on the MTAI. There were no individuals within the local group whose scores indicated significant negative change.

It was noted that the wide range of scores on the MTAI is revealed in percentile ranks. The pre institute MTAI percentiles range from below the 1st through the 86th percentile, while the post institute MTAI percentiles range from below the 1st through the 82nd percentile.

It may be concluded that it appears that the subjects of this investigation in the counselor training institute, after one year of intensified training, did not change significantly in the area of attitude as a group. Individual change within the group was noted. By inspection only, from data on both the temperament and attitude scales, the subjects did not achieve the institute objectives in the

affective domain to a significant degree. It is further noted that no appreciable change could be expected in the conative aspect of enrollee behavior for the total group.

Practicum grades of enrollees.---The data concerning the achievement level of enrollees, in terms of the grades assigned as a result of the practicum experience, is presented in Table 4.

TABLE 4
DISTRIBUTION OF GRADE POINT AVERAGES
FOR 24 NDEA ENROLLEES IN PRACTICUM

Grades	Grades
2.0	3.0
2.0	3.0
3.0	2.0
2.0	3.0
2.0	3.0
3.0	2.0
2.0	2.0
2.0	3.0
2.0	2.0
3.0	2.0
2.0	2.0
2.0	3.0
<hr/>	
N = 24	Range = 2
M = 2.38	SE _m = .04
SD = .15	SE _{σ} = .02

The grade point average has a one (1) point range, since only two weights are applicable here. The average

grade point average for the subjects of this study was found by computing the mean. The mean of the distribution was found to be 2.38, with a standard deviation of .15, standard error of the mean of .04, and the standard error of the standard deviation of .02. The standard error of the mean suggests that the obtained mean would not deviate more than $\pm .04$ deviations from the population mean, and that the sample standard deviation will not deviate more than $\pm .02$ deviation units from the population standard deviation.

CHAPTER III

SUMMARY, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

Problem and methodology.--The problem involved in this study was to ascertain the extent to which participants in a one year training program of counselor education exhibit change in the cognitive and the affective aspects of their behavior.

The writer sought to ascertain the impact of a one year training program of counselor education on the recall of knowledge, acquisition of new skills, enhancement of intellectual abilities, the effects on attitude and temperament. Specifically, the writer sought to:

1. Ascertain the degree of change in abilities, skills and knowledge of enrollees.
2. To ascertain the degree of change in the temperament of enrollees.
3. To ascertain the degree of change in the attitude of enrollees.
4. To ascertain the achievement level of enrollees.

The study was conducted and completed during the summer of 1967 on the campus of Atlanta University. A total

of twenty-four enrollees from the 1966-67 NDEA Counseling and Guidance Institute participated in the study.

The ~~descriptive~~-survey method of research was utilized in conducting the study, and the following instruments were employed in gathering the data for this research project:

1. The National Defense Education Act Comprehensive Test
2. The Guilford-Zimmerman Temperament Survey
3. The Minnesota Teacher Attitude Inventory
4. Practicum Grades

Permission to conduct the study was obtained from the NDEA Counseling and Guidance Institute director and major adviser, literature pertinent to the present study was surveyed, and coded test data and grades were secured from the Institute director and major adviser.

The data derived from the administration of tests and from practicum grades used in the study were tabulated, treated statistically, evaluated, and interpreted with the results reported in Chapter II.

The statistical treatment included the making of distribution tables for each test and sub tests, and for practicum grades. The mean, range, standard deviation,

standard error of each mean, the standard error of the difference between pre and post institute means were computed. The pre and post institute means were compared and tested for significance by the application of the "t" ratio. The "t" data were tested at the .01 per cent level of confidence.

Summary of related literature.--In order to adequately evaluate a program of instruction, the educational goals or objectives must be accepted and used as guides for the evaluation. In evaluating change in behavior, the stage must have been set to produce desirable changes within individuals.

Both the cognitive and the affective domains or areas should be considered in setting realistic goals.

According to Tyler, developing a curriculum and instructional programs, four major types of questions are considered: What educational purposes or objectives should the school or course seek to attain? What learning experiences can be provided that are likely to bring about the attainment of these purposes? How can these learning experiences be effectively organized to help provide continuity and sequence for the learner and to help him in integrating what might otherwise appear as isolated learning experiences? How can the effectiveness be evaluated by the use of tests

and other systematic evidence-gathering procedures?¹

Citing an example, Dressel uses questions to make his belief more implicit. He says: Of those individuals who are observed to handle adequately a situation supposedly involving a certain behavior--do they all show that behavior? Do they show it in varying ways and amounts? In what ways do they differ? Do some show complete absence or almost complete absence of the behavior? If presence of the desired behavior is found to be necessary for success, what are alternative patterns of behavior which succeed, and to what knowledge, experience, interests, attitudes, etc. are these due?²

It should be noted here that the answers to these questions about students or enrollees should be supplied in terms of actual data on individuals, not in terms of guesses.

We can be reasonably certain that the methods of measuring achievement for research purposes should reach into certain other realms of the psychological makeup of the individual.

Temperament has been found to be one factor in

¹Tyler, loc. cit.

²Dressel, loc. cit.

personality and has been defined as the characteristic physical and mental peculiarity of an individual as manifested in his reactions, mental constitution, disposition and adjustment.¹

Leeds investigated temperament and attitudes by showing relationships between components of the Guilford-Zimmerman Temperament Survey and the Minnesota Teacher Attitude Inventory. He found significant correlations between the MTAI and variables A, S, E, D, F, P, M at the .01 per cent level of confidence.²

Sprague compared the Guilford-Zimmerman Temperament Survey scores with achievement level and fluctuation and found that Ascendancy, Sociability and Emotional Stability were curvilinearly correlated with achievement level and fluctuation.³

Thurstone says that attitude denotes the sum total of a man's inclinations and feelings, prejudice and bias, pre-conceived notions, ideas, fears, threats and convictions about any specific topic. Thus, a man's attitude means all

¹Funk and Wagnalls, loc. cit.

²Leeds, loc. cit.

³Sprague, loc. cit.

that he feels and thinks about a subjective and personal affair.¹

DiMichael reports a study of a group of teachers in an Educational Guidance class, and another group of teachers in a Mental Hygiene class. He found that only the Mental Hygiene class produced significant change in attitudes of experienced teachers toward child behavior.²

Wickman concluded that social behavior is not transformed by knowledge or instruction until that knowledge becomes integrated into the behavior of the individual. Only in so far as the social experiences and attitudes of children are in harmony with the ideas that are presented them, and to the extent that they can comfortably practice these ideas, can behavior be intellectually controlled.³

Summary of findings.--The analysis of the data collected in this study provides the following findings:

1. The difference between the pre and post institute means of Section I, History, Principles, and Professional Information of the NDEA Comprehensive is statistically significant. The "t" ratio for this group is 6.98 and is significant beyond the .01 level of confidence.

¹Thurstone, loc. cit.

²DiMichael, loc. cit.

³Wickman, loc. cit.

2. The difference between the pre and post institute means of Section II, Occupational and Educational Information of the NDEA Comprehensive is statistically significant. The "t" ratio for this group is 6.97 and is significant beyond the .01 per cent level of confidence.
3. The difference between the pre and post institute means of Section III, Test and Measurement of the NDEA Comprehensive is a significant difference. The "t" ratio of 5.93 for this group is significant beyond the .01 level of confidence.
4. The difference between the pre and post institute means of Section IV, Counseling Theory and Procedure of the NDEA Comprehensive is significant beyond the .01 level of confidence, as revealed by a "t" ratio of 5.76.
5. The difference between the pre and post institute means of Section V, Psychological Foundations of the NDEA Comprehensive is statistically significant. The "t" ratio of 4.84 is significant beyond the .01 level of confidence.
6. The difference between the pre and post institute means of Section VI, Related Fields of the NDEA Comprehensive is significant. The "t" ratio of 4.35 indicates that it is significant beyond the .01 per cent level of confidence.
7. The difference between the pre and post institute means of Section VII, Total Scores on the NDEA Comprehensive is significant. The obtained "t" ratio of 7.52 exceeds the value of 2.68 needed to be significant at the .01 per cent level of confidence with 46 df, hence the difference between the pre and post institute Total Score means is significant beyond the .01 per cent level of confidence.
8. The "t" ratio for comparison between pre and post institute means of the General Activity (G) variable on the GZTS is .20. This "t" is insignificant.

9. The "t" ratio for comparison between pre and post institute means on the Restraint (R) variable of the GZTS is .93. This "t" is insignificant.
10. The "t" ratio for comparison between pre and post institute means on the Ascendancy (A) variable of GZTS is .42. This "t" is insignificant.
11. The "t" ratio for comparison between pre and post institute means on the Sociability (S) variable of GZTS is .21. This "t" is insignificant.
12. The "t" ratio of comparison between pre and post institute means on the Emotional Stability (E) variable of GZTS is 1.51 and is insignificant.
13. The "t" ratio for comparison between pre and post institute means on the Objectivity (O) variable of GZTS is 1.01 and is insignificant.
14. The "t" ratio for comparison between pre and post institute means on the Friendliness (F) variable of GZTS is .73 and is insignificant.
15. The "t" ratio for comparison between pre and post institute means on the Thoughtfulness (T) variable of GZTS is .05. This "t" did not differ significantly from zero.
16. The "t" ratio for comparison between pre and post institute means on the Personal Relations (P) variable of GZTS is 1.12. This "t" is insignificant.
17. The "t" ratio for comparison between pre and post institute means on the Masculinity (M) variable of GZTS is .09. This "t" is insignificant.
18. Positive significant change in individual enrollees is noted on all GZTS variables, except the Restraint variable.
19. Negative significant change in individual enrollees is noted on all GZTS variables, except the Sociability and Emotional Stability variables.

20. The change between the pre and post institute means of the MTAI is insignificant. A "t" value of 1.49 indicates that this "t" is insignificant, since a "t" of 2.01 is needed to be significant at the .05 per cent level of confidence with 46 df.
21. Positive significant change in individual enrollees is noted on the MTAI. No negative individual changes are noted.
22. The mean for the practicum grade point average is 2.34, with a standard deviation of .15. The variability within this group appears to be small.

Conclusions.---The findings in this study seem to warrant the following conclusions related to the purposes set forth at the beginning of this study. These conclusions are applicable to the subjects of the present study and by inference to others with caution.

1. There is a statistically reliable change between the pre and post institute means of Section I, History, Principles and Professional Information.
2. There is a statistically reliable change between the pre and post institute means of Section II, Occupational and Educational Information.
3. The change between the pre and post institute means on Section III, Test and Measurement is statistically reliable.
4. The change between the pre and post institute means on Section IV, Counseling Theory and Procedure is statistically significant.
5. There is a statistically significant change between the pre and post institute means on Section V, Psychological Foundations.

6. The change between the pre and post institute means on Section VI, Related Fields is statistically reliable.
7. There is a statistically reliable change between the pre and post means of Section VII, Total Scores on the NDEA Comprehensive of which Sections I, II, III, IV, V, and VI are components.
8. There is no significant change between pre and post institute means of General Activity (G) on GZTS for the total group.
9. There is no significant change between pre and post institute means of Restraint (R) on GZTS for the total group.
10. The change between pre and post institute means of Ascendance (A) on the GZTS is insignificant for the total group.
11. The change between pre and post means of Sociability (S) of GZTS is insignificant for the total group.
12. The change between pre and post institute means of Emotional Stability (E) on GZTS is insignificant for the total group.
13. There is no significant change between pre and post institute means of Objectivity (O) for the total group.
14. There is no significant change between pre and post institute means of Friendliness (F) on GZTS for the total group.
15. There is no statistically reliable change between pre and post institute means of Thoughtfulness (T) on GZTS for the total group.
16. There is no significant change between pre and post institute means of Personal Relations (P) on GZTS for the total group.

17. There is no statistically reliable change between pre and post institute means of Masculinity (M) on GZTS for the total group.
18. There is significant positive change in individual enrollees on all GZTS variables, except the Restraint variable.
19. There is significant negative change in individual enrollees on all GZTS variables except the Sociability and Emotional Stability variables.
20. There is no statistically reliable change between the pre and post means on the MTAI.
21. There is significant positive change in individual enrollees on the MTAI. No negative changes are noted.
22. There is stability of the mean and standard deviation for practicum grades.

Implications.--The interpretation of the data collected in this study seem to point to the fact that:

1. There is a difference between the pre and post institute means on all sections of the NDEA Comprehensive. These data provide evidence of change in the cognitive aspect of behavior.
2. The difference between the pre and post institute means on the temperament and attitude variables, the affective aspect of behavior, are not statistically reliable. It was noted that individuals showed both positive and negative change on certain temperament variables and only positive change on the attitude variable.
3. The low "t" ratio found between means of traits studied certainly offers evidence that counselor educators cannot hope to learn a great deal more about the affective aspect of behavior unless other means of evidence gathering are applied.

4. Evaluation of the affective aspect of behavior must at all times be approached directly.
5. The institute administrators can more effectively guide enrollees, if they have on hand and use constantly objective data concerning all aspects of the enrollees' psychological makeup.
6. In the area of the counseling profession, this study gives no real evidence that low scoring individuals will not eventually become effective counselors.
7. Though an individual scores high in the acquisition of knowledge, it does not mean that the same individual will score high on traits in the conative aspect of behavior. Individuals possess those factors which were studied in varying degrees. By chance one of these factors can be possessed to a high degree and another or other factors to a low degree by the same individual.

Recommendations.--The interpretation of the findings together with the implications suggests these recommendations.

1. The Atlanta University Counseling and Guidance Institute should give serious consideration to the formulation of more and more clearly defined objectives or goals in the affective area and provide an array of learning experiences to insure significant behavioral change in this area.
2. The Atlanta University Counseling and Guidance Institute might consider the addition of other data gathering means to provide enrollees with more insight into their affective makeup.
3. The administration of the Counseling and Guidance Institute might consider, on the basis of the literature, a class in Mental Hygiene, as such, which would provide a direct opportunity for enrollees to develop in the affective domain.

4. More intense counseling of individual enrollees about their potential as counselors might be considered as a part of the selection procedure.

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